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## RAW SEQUENCE LISTING

DATE: 11/21/2002

PATENT APPLICATION: US/09/780,438B

TIME: 10:08:29

Input Set : A:\EP.txt

Output Set: N:\CRF4\11212002\I780438B.raw

3 <110> APPLICANT: Qi, Xiaoyang  
 5 <120> TITLE OF INVENTION: Fusogenic Properties of Saposin C and Related Proteins and Polypeptides  
 6 for Application to Transmembrane Drug Delivery Systems  
 8 <130> FILE REFERENCE: 60/181,754  
 10 <140> CURRENT APPLICATION NUMBER: US 09/780,438B  
 11 <141> CURRENT FILING DATE: 2001-02-09  
 13 <150> PRIOR APPLICATION NUMBER: 60/181,754  
 14 <151> PRIOR FILING DATE: 2000-02-11  
 16 <160> NUMBER OF SEQ ID NOS: 4  
 18 <170> SOFTWARE: PatentIn version 3.1  
 20 <210> SEQ ID NO: 1  
 21 <211> LENGTH: 38  
 22 <212> TYPE: PRT  
 23 <213> ORGANISM: Homo sapiens  
 25 <220> FEATURE:  
 26 <221> NAME/KEY: MISC\_FEATURE  
 27 <222> LOCATION: (1)..(1)  
 28 <223> OTHER INFORMATION: Where the amino acid located at 1 is a hydrophobic amino acid,  
 29 including Val, Leu, Ile, Met, Pro, Phe, and Ala  
 32 <220> FEATURE:  
 33 <221> NAME/KEY: MISC\_FEATURE  
 34 <222> LOCATION: (2)..(2)  
 35 <223> OTHER INFORMATION: Where the amino acid located at 2 is an uncharged polar amino acid,  
 36 including Thr, Ser, Tyr, Gly, Gln, and Asn  
 39 <220> FEATURE:  
 40 <221> NAME/KEY: MISC\_FEATURE  
 41 <222> LOCATION: (5)..(5)  
 42 <223> OTHER INFORMATION: Where the amino acid located at 5 is a hydrophobic amino acid,  
 43 including Val, Leu, Ile, Met, Pro, Phe, and Ala  
 46 <220> FEATURE:  
 47 <221> NAME/KEY: MISC\_FEATURE  
 48 <222> LOCATION: (8)..(10)  
 49 <223> OTHER INFORMATION: Where the amino acids located at 8-10 are hydrophobic amino acids,  
 50 including Val, Leu, Ile, Met, Pro, Phe, and Ala  
 53 <220> FEATURE:  
 54 <221> NAME/KEY: MISC\_FEATURE  
 55 <222> LOCATION: (13)..(13)  
 56 <223> OTHER INFORMATION: Where the amino acid located at 13 is a hydrophobic amino acid,

P.11  
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57 including Val, Leu, Ile, Met, Pro, Phe, and Ala  
59 <220> FEATURE:  
60 <221> NAME/KEY: MISC\_FEATURE  
61 <222> LOCATION: (14)..(14)  
62 <223> OTHER INFORMATION: Where the amino acid located at 14 is an uncharged polar  
amino acid,

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63      including Thr, Ser, Tyr, Gly, Gln, and Asn
66 <220> FEATURE:
67 <221> NAME/KEY: MISC_FEATURE
68 <222> LOCATION: (16)..(17)
69 <223> OTHER INFORMATION: Where the amino acids located at 16 and 17 are hydrophobic
amino
70      acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala
73 <220> FEATURE:
74 <221> NAME/KEY: MISC_FEATURE
75 <222> LOCATION: (22)..(22)
76 <223> OTHER INFORMATION: Where the amino acid located at 22 is an uncharged polar
amino
77      acid, including Thr, Ser, Tyr, Gly, Gln, and Asn
80 <220> FEATURE:
81 <221> NAME/KEY: MISC_FEATURE
82 <222> LOCATION: (26)..(27)
83 <223> OTHER INFORMATION: Where the amino acids located at 26 and 27 are hydrophobic
amino
84      acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala
87 <220> FEATURE:
88 <221> NAME/KEY: MISC_FEATURE
89 <222> LOCATION: (29)..(30)
90 <223> OTHER INFORMATION: Where the amino acids located at 29 and 30 are hydrophobic
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91      acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala
94 <220> FEATURE:
95 <221> NAME/KEY: MISC_FEATURE
96 <222> LOCATION: (33)..(33)
97 <223> OTHER INFORMATION: Where the amino acid located at 33 is a hydrophobic amino
acid,
98      including Val, Leu, Ile, Met, Pro, Phe, and Ala
101 <220> FEATURE:
102 <221> NAME/KEY: MISC_FEATURE
103 <222> LOCATION: (35)..(35)
104 <223> OTHER INFORMATION: Where the amino acid located at 35 is an uncharged polar
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105      acid, including Thr, Ser, Tyr, Gly, Gln, and Asn
108 <220> FEATURE:
109 <221> NAME/KEY: MISC_FEATURE
110 <222> LOCATION: (37)..(38)
111 <223> OTHER INFORMATION: Where the amino acids located at 37 and 38 are hydrophobic
amino
112      acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala
115 <400> SEQUENCE: 1
W--> 117 Xaa Xaa Cys Glu Xaa Cys Glu Xaa Xaa Xaa Lys Glu Xaa Xaa Lys Xaa
118 1          5          10          15
W--> 121 Xaa Asp Asn Asn Lys Xaa Glu Lys Glu Xaa Xaa Asp Xaa Xaa Asp Lys
122          20          25          30
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126          35
129 <210> SEQ ID NO: 2
130 <211> LENGTH: 39
131 <212> TYPE: PRT

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132 <213> ORGANISM: Homo sapiens  
134 <220> FEATURE:  
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136 <222> LOCATION: (1)..(2)

137 <223> OTHER INFORMATION: Where the amino acids located at 1 and 2 are hydrophobic amino acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala

141 <220> FEATURE:

142 <221> NAME/KEY: MISC\_FEATURE

143 <222> LOCATION: (3)..(3)

144 <223> OTHER INFORMATION: Where the amino acid located at 3 is an uncharged polar amino acid, including Thr, Ser, Tyr, Gly, Gln, and Asn

148 <220> FEATURE:

149 <221> NAME/KEY: MISC\_FEATURE

150 <222> LOCATION: (6)..(6)

151 <223> OTHER INFORMATION: Where the amino acid located at 6 is a hydrophobic amino acid, including Val, Leu, Ile, Met, Pro, Phe, and Ala

155 <220> FEATURE:

156 <221> NAME/KEY: MISC\_FEATURE

157 <222> LOCATION: (9)..(11)

158 <223> OTHER INFORMATION: Where the amino acids located at 9-11 are hydrophobic amino acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala

162 <220> FEATURE:

163 <221> NAME/KEY: MISC\_FEATURE

164 <222> LOCATION: (14)..(14)

165 <223> OTHER INFORMATION: Where the amino acid located at 14 is a hydrophobic amino acid, including Val, Leu, Ile, Met, Pro, Phe, and Ala

169 <220> FEATURE:

170 <221> NAME/KEY: MISC\_FEATURE

171 <222> LOCATION: (15)..(15)

172 <223> OTHER INFORMATION: Where the amino acid located at 15 is an uncharged polar amino acid, including Thr, Ser, Tyr, Gly, Gln, and Asn

176 <220> FEATURE:

177 <221> NAME/KEY: MISC\_FEATURE

178 <222> LOCATION: (17)..(18)

179 <223> OTHER INFORMATION: Where the amino acids located at 17 and 18 are hydrophobic amino acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala

183 <220> FEATURE:

184 <221> NAME/KEY: MISC\_FEATURE

185 <222> LOCATION: (23)..(23)

186 <223> OTHER INFORMATION: Where the amino acid located 23 is an uncharged polar amino acid, including Thr, Ser, Tyr, Gly, Gln, and Asn

190 <220> FEATURE:

191 <221> NAME/KEY: MISC\_FEATURE

192 <222> LOCATION: (27)..(28)

193 <223> OTHER INFORMATION: Where the amino acids located at 27 and 28 are hydrophobic amino acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala

197 <220> FEATURE:

198 <221> NAME/KEY: MISC\_FEATURE  
199 <222> LOCATION: (30)..(31)  
200 <223> OTHER INFORMATION: Where the amino acids located at 30 and 31 are hydrophobic  
amino  
201 acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala  
204 <220> FEATURE:

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DATE: 11/21/2002

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TIME: 10:08:29

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205 <221> NAME/KEY: MISC_FEATURE
206 <222> LOCATION: (34)..(34)
207 <223> OTHER INFORMATION: Where the amino acid located at 34 is a hydrophobic amino
acid,
208     including Val, Leu, Ile, Met, Pro, Phe, and Ala
211 <220> FEATURE:
212 <221> NAME/KEY: MISC_FEATURE
213 <222> LOCATION: (36)..(36)
214 <223> OTHER INFORMATION: Where the amino acid located at 36 is an uncharged polar
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215     acid, including Thr, Ser, Tyr, Gly, Gln, and Asn
218 <220> FEATURE:
219 <221> NAME/KEY: MISC_FEATURE
220 <222> LOCATION: (38)..(39)
221 <223> OTHER INFORMATION: Where the amino acids located at 38 and 39 are hydrophobic
amino
222     acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala
225 <400> SEQUENCE: 2
W--> 227 Xaa Xaa Xaa Cys Glu Xaa Cys Glu Xaa Xaa Xaa Lys Glu Xaa Xaa Lys
228 1          5          10          15
W--> 231 Xaa Xaa Asp Asn Asn Lys Xaa Glu Lys Glu Xaa Xaa Asp Xaa Xaa Asp
232          20          25          30
W--> 235 Lys Xaa Cys Xaa Lys Xaa Xaa
236          35
239 <210> SEQ ID NO: 3
240 <211> LENGTH: 38
241 <212> TYPE: PRT
242 <213> ORGANISM: Homo sapiens
244 <220> FEATURE:
245 <221> NAME/KEY: MISC_FEATURE
246 <222> LOCATION: (1)..(1)
247 <223> OTHER INFORMATION: Where the amino acid located at 1 is a hydrophobic amino
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248     including Val, Leu, Ile, Met, Pro, Phe, and Ala
251 <220> FEATURE:
252 <221> NAME/KEY: MISC_FEATURE
253 <222> LOCATION: (2)..(2)
254 <223> OTHER INFORMATION: Where the amino acid located at 2 is an uncharged polar
amino acid,
255     including Thr, Ser, Tyr, Gly, Gln, and Asn
258 <220> FEATURE:
259 <221> NAME/KEY: MISC_FEATURE
260 <222> LOCATION: (5)..(5)
261 <223> OTHER INFORMATION: Where the amino acid located at 5 is a hydrophobic amino
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262     including Val, Leu, Ile, Met, Pro, Phe, and Ala
265 <220> FEATURE:
266 <221> NAME/KEY: MISC_FEATURE
267 <222> LOCATION: (8)..(10)
268 <223> OTHER INFORMATION: Where the amino acids located at 8-10 are hydrophobic amino
acids,
269     including Val, Leu, Ile, Met, Pro, Phe, and Ala
272 <220> FEATURE:

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273 <221> NAME/KEY: MISC\_FEATURE

274 <222> LOCATION: (13)..(13) ✓

275 <223> OTHER INFORMATION: Where the amino acid located at 13 is a hydrophobic amino acid,



## RAW SEQUENCE LISTING

DATE: 11/21/2002

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TIME: 10:08:29

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276      including Val, Leu, Ile, Met, Pro, Phe, and Ala
279 <220> FEATURE:
280 <221> NAME/KEY: MISC_FEATURE
281 <222> LOCATION: (14)..(14)
282 <223> OTHER INFORMATION: Where the amino acid located at 14 is an uncharged polar
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283      acid, including Thr, Ser, Tyr, Gly, Gln, and Asn
286 <220> FEATURE:
287 <221> NAME/KEY: MISC_FEATURE
288 <222> LOCATION: (16)..(17)
289 <223> OTHER INFORMATION: Where the amino acids located at 16 and 17 are hydrophobic
amino
290      acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala
293 <220> FEATURE:
294 <221> NAME/KEY: MISC_FEATURE
295 <222> LOCATION: (22)..(22)
296 <223> OTHER INFORMATION: Where the amino acid located at 22 is an uncharged polar
amino
297      acid, including Thr, Ser, Tyr, Gly, Gln, and Asn
300 <220> FEATURE:
301 <221> NAME/KEY: MISC_FEATURE
302 <222> LOCATION: (26)..(27)
303 <223> OTHER INFORMATION: Where the amino acids located at 26 and 27 are hydrophobic
amino
304      acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala
307 <220> FEATURE:
308 <221> NAME/KEY: MISC_FEATURE
309 <222> LOCATION: (29)..(30)
310 <223> OTHER INFORMATION: Where the amino acids located at 29 and 30 are hydrophobic
amino
311      acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala
314 <220> FEATURE:
315 <221> NAME/KEY: MISC_FEATURE
316 <222> LOCATION: (33)..(33)
317 <223> OTHER INFORMATION: Where the amino acid located at 33 is a hydrophobic amino
acid,
318      including Val, Leu, Ile, Met, Pro, Phe, and Ala
321 <220> FEATURE:
322 <221> NAME/KEY: MISC_FEATURE
323 <222> LOCATION: (35)..(35)
324 <223> OTHER INFORMATION: Where the amino acid located at 35 is an uncharged polar
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325      acid, including Thr, Ser, Tyr, Gly, Gln, and Asn
328 <220> FEATURE:
329 <221> NAME/KEY: MISC_FEATURE
330 <222> LOCATION: (37)..(38)
331 <223> OTHER INFORMATION: Where the amino acids located at 37 and 38 are hydrophobic
amino
332      acids, including Val, Leu, Ile, Met, Pro, Phe, and Ala
335 <400> SEQUENCE: 3
W--> 337 Xaa Xaa Cys Glu Xaa Cys Glu Xaa Xaa Xaa Lys Glu Xaa Xaa Lys Xaa
338 1          5          10          15
W--> 341 Xaa Asp Asn Asn Lys Xaa Glu Lys Glu Xaa Xaa Asp Xaa Xaa Asp Lys

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342 20 25 30  
W--> 345 Xaa Cys Xaa Lys Xaa Xaa  
346 35  
349 <210> SEQ ID NO: 4

RAW SEQUENCE LISTING ERROR SUMMARY  
PATENT APPLICATION: US/09/780,438B

DATE: 11/21/2002  
TIME: 10:08:30

Input Set : A:\EP.txt

Output Set: N:\CRF4\11212002\I780438B.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:1; Xaa Pos. 1, 2, 5, 8, 9, 10, 13, 14, 16, 17, 22, 26, 27, 29, 30, 33, 35, 37, 38

Seq#:2; Xaa Pos. 1, 2, 3, 6, 9, 10, 11, 14, 15, 17, 18, 23, 27, 28, 30, 31, 34, 36, 38, 39

Seq#:3; Xaa Pos. 1, 2, 5, 8, 9, 10, 13, 14, 16, 17, 22, 26, 27, 29, 30, 33, 35, 37, 38

Seq#:4; Xaa Pos. 1, 2, 5, 8, 9, 10, 13, 14, 16, 17, 22, 26, 27, 29, 30, 33, 35, 37, 38

**VERIFICATION SUMMARY**

DATE: 11/21/2002

PATENT APPLICATION: **US/09/780,438B**

TIME: 10:08:30

Input Set : **A:\EP.txt**Output Set: **N:\CRF4\11212002\I780438B.raw**

L:117 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:0  
L:121 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:16  
L:125 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:32  
L:227 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:0  
L:231 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:16  
L:235 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:32  
L:337 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:0  
L:341 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:16  
L:345 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:32  
L:449 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:0  
L:453 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:16  
L:457 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:32